AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph on page 4, line 7, to line 25, as follows:

FIG. 21 shows an exemplary structure of a sending and receiving device 96 for transmitting a MOST frame via a twisted pair cable. In FIG. 21, a MOST frame (serial data) which is output from the MOST controller 91 is converted into parallel data in units of 2 bits by an s/p conversion section 97. An octonary mapping section 98 maps 2-bit data which is sequentially output from the s/p conversion section 97 to a predetermined signal level as one symbol. (More accurately, the octonary mapping section 98 maps each symbol to a change amount from the immediately previous symbol, but this will not be described in detail here.) FIG. 22 shows an exemplary result of processing performed by the octonary mapping section 98. The result of processing performed by the octonary mapping section 98 is converted into an analog signal by a D/A conversion section 99 and then is output to a twisted pair cable 105 via a differential driver 100. Although not shown, the sending and receiving device 96 includes a digital filter such as a roll-off filter or the like on a stage after the octonary mapping section 98, and also includes an analog filter on, for example, a stage after the D/A conversion section 99.

Please amend the paragraph on page 6, line 20, to page 7, line 3, as follows:

A data sending device (10) according to the present invention generates and outputs a sending signal based on biphase-mark-encoded sending data, and comprises a biphase decoding section (12) for biphase-mark-decoding the sending data; and a sending section (14) for generating and outputting the sending signal based on output data from the biphase decoding section. The sending section includes a mapping section for mapping each symbol of the output data from the biphase decoding section to any one of a plurality of signal levels, and generates the sending signal based on output data from the mapping section; the sending data includes a data section to which biphase mark encoding is applied, and a non-data section to which the biphase mark encoding is not applied; the biphase decoding section detects the non-data section; and when the biphase decoding section detects the non-data section, the mapping section maps the non-data section using a mapping table which is different from a mapping table used for the data section. Thus, when sending or receiving biphase-mark-encoded sending signal, electromagnetic radiation can be further reduced and also transmission errors can be further decreased.

Please amend the paragraph on page 7, line 11, to line 19, as follows:

A data receiving device (22) according to the present invention generates and outputs receiving data based on a receiving signal, and comprises a receiving section (26) for receiving the receiving signal; and a biphase encoding section (24) for generating the receiving data by biphase-mark-encoding output data from the receiving section and outputting the receiving data. The receiving signal includes a data section and a non-data section; the receiving section detects the non-data section; and when the receiving section detects the non-data section, the biphase encoding section converts the non-data section into a predetermined bit stream using a conversion table. Thus, when sending or receiving biphase-mark-encoded sending signal, electromagnetic radiation can be further reduced and also transmission errors can be further decreased.

Please amend the paragraph on page 8, line 2, to line 14, as follows:

A data transmission method according to the present invention is for transmitting sending data including a data section to which biphase mark encoding is applied and a non-data section to which the biphase mark encoding is not applied; and comprises the steps of: biphase-mark-decoding the data section of the sending data and mapping each symbol of a result of the biphase mark encoding to any one of a plurality of signal levels; detecting the non-data section from the sending data and mapping the detected non-data section using a mapping table which is different from a mapping table used for the data section; generating a sending signal based on a result of the mapping of the data section and the non-data section; transmitting the generated sending signal; receiving the transmitted sending signal as a receiving signal; biphase-mark-encoding a part of the receiving signal corresponding to the data section; and detecting a part of the receiving signal corresponding to the non-data section, and converting the detected part into a predetermined bit stream using a conversion table. ~~biphase-mark-encoded sending data. According to the method, the sending data is biphase-mark-decoded and then sent on a sending side; and the sending data is reproduced by biphase-mark-encoding receiving data on a receiving side.~~ Thus, when sending or receiving biphase-mark-encoded sending signal, electromagnetic radiation can be further reduced and also transmission errors can be further decreased, without changing the function of the apparatus on the sending side of generating the sending data by

biphase-mark-encoding the original data to be transferred, or the function of the apparatus on the receiving side of reproducing the original data by biphase-mark-decoding receiving data.

Please insert the following paragraph on page 8, after line 14 as follows:

A data sending and receiving device according to the present invention comprises a data sending section for generating and outputting a sending signal based on biphase-mark-encoded sending data, and a data receiving section for generating and outputting receiving data based on a receiving signal. The data sending section comprises a biphase decoding section for biphase-mark-decoding the sending data; and a sending section for generating and outputting the sending signal based on output data from the biphase decoding section. The sending section includes a mapping section for mapping each symbol of the output data from the biphase decoding section to any one of a plurality of signal levels, and generates the sending signal based on output data from the mapping section; the sending data includes a data section to which biphase mark encoding is applied, and a non-data section to which the biphase mark encoding is not applied; the biphase decoding section detects the non-data section; and when the biphase decoding section detects the non-data section, the mapping section maps the non-data section using a mapping table which is different from a mapping table used for the data section. The data receiving section comprises a receiving section for receiving the receiving signal; and a biphase encoding section for generating the receiving data by biphase-mark-encoding output data from the receiving section and outputting the receiving data. The receiving signal includes a data section and a non-data section; the receiving section detects the non-data section; and when the receiving section detects the non-data section, the biphase encoding section converts the non-data section into a predetermined bit stream using a conversion table.

Please amend the paragraph on page 13, line 5, to page 14, line 2, as follows:

FIG. 6 shows a specific example of the mapping table held by the quaternary mapping section 16. In the mapping table shown in FIG. 6, the numerals in the parentheses each show a difference from the signal level of the immediately previous symbol. In the data receiving device described later, pre-mapping data is reproduced based on the difference. In more detail, when the difference from the signal level of the immediately previous symbol is any one of -3, -1, +1, and +3, the sending data can be determined as being 0. When the difference from the

signal level of the immediately previous symbol is either -2 or +2, the sending data can be determined as being ~~0~~ 1. By transmitting data in relation with the signal level difference between two consecutive symbols, the signal level acting as a reference (for example, the ground level) is not required when reproducing the data. This is especially effective when the signal level acting as a reference is different between the data sending device and the data receiving device. The present invention is not limited to this, and, for example, symbol 0 may be mapped to the signal level of +0.5 or -0.5 whereas symbol 1 may be mapped to the signal level of +1.5 or -1.5, regardless of the signal level of the immediately previous symbol. Alternatively, symbol 0 and symbol 1 may be mapped respectively to binary levels, regardless of the signal level of the immediately previous symbol.

Please amend the paragraph on page 22, line 6, to line 9, as follows:

As described above, by using a mapping table and a conversion table special for header sections, a header to which biphase mark encoding is not applied, can be transmitted, and the present invention is applicable to such a header.